AIR CONDITIONING AND VENTILATING SUPPLY SYSTEMS

SYSTEM NO.	LOCATION	SERVICE	CENTRIFUGAL FANS: C.F.M.	STATIC PRESSURE INCHES OF WATER	MAXIMUM OUTLET V.F.P.M.	FAN R.P.M.	DIRECTION OF DISCHARGE	CLASS	ARRANGEMENT	WHEEL DIAMETER IN INCHES	TYPE	B.H.P.	MOTOR: H.P.	R.P.M.	VOLTS	PHASE	HZ	AIR FILTERS: MAX. CLEAN PRESSURE DROP "W.G.	FINAL FILTER PRESS. DROP "W.G.	EFFICIENCY BASED ON ASHRAE 52-76 STANDARD %	MAXIMUM FACE VELOCITY F.P.M.	MODEL
ACS-41-1	MER 41N TOWER ONE	N. PERIPHERAL 25-58th FLOOR	47,500	10.5	2,830	1,290	TOP HORIZ	III	3	40.25	DWDI	102	125	1,750	460	3	60	.30	1.5	85	500	RIGA FLOW 100
ACS-41N	MER 41N TOWER ONE	SUB-STATION	12,000	2.5	–	1,100	PLENUM	I	PLUG	30	SWSI	8	10	1,750	460	3	60	.30	1.0	30	500	30/30
ACS-41-9	MER 41S TOWER ONE	N.W. INTERIOR 43-58th FLOOR	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ACS-41S	MER 41S TOWER ONE	SUB-STATION	12,000	2.5	–	1,100	PLENUM	I	PLUG	30	SWSI	8	10	1,750	460	3	60	.30	1.0	30	500	30/30
ACS-41-3	MER 41S TOWER ONE	S. PERIPHERAL 25-58th FLOOR	56,500	10.5	2,757	1,155	TOP HORIZ	III	3	44.5	DWDI	122	150	1,750	460	3	60	.30	1.5	85	500	RIGA FLOW 100
ACS-75N	MER 75N TOWER ONE	SUB-STATION	12,000	2.5	–	1,100	PLENUM	I	PLUG	30	SWSI	8	10	1,750	460	3	60	.30	1.0	30	500	30/30
ACS-75-1	MER 75N TOWER ONE	N. PERIPHERAL 59-91st FLOOR	46,000	10.5	2,741	1,250	TOP HORIZ	III	3	40.25	DWDI	99	125	1,750	460	3	60	.30	1.5	85	500	RIGA FLOW 100
ACS-75S	MER 75S TOWER ONE	SUB-STATION	12,000	2.5	–	1,100	PLENUM	I	PLUG	30	SWSI	8	10	1,750	460	3	60	.30	1.0	30	500	30/30
ACS-75-3	MER 75S TOWER ONE	S. PERIPHERAL 59-91st FLOOR	55,000	10.5	2,684	1,125	TOP HORIZ	III	3	44.5	DWDI	119	150	1,750	460	3	60	.30	1.5	85	500	RIGA FLOW 100
ACS-75W	MER 75W TOWER TWO	SUB-STATION	12,000	2.5	–	1,100	PLENUM	I	PLUG	30	SWSI	8	10	1,750	460	3	60	.30	1.0	30	500	30/30
ACS-75-4	MER 75W TOWER TWO	W. PERIPHERAL 59-91st FLOOR	46,500	10.5	2,771	1,265	TOP HORIZ	III	3	40.25	DWDI	100	125	1,750	460	3	60	.30	1.5	85	500	RIGA FLOW 100
ACS-75E	MER 75E TOWER TWO	SUB-STATION	12,000	2.5	–	1,100	PLENUM	I	PLUG	30	SWSI	8	10	1,750	460	3	60	.30	1.0	30	500	30/30
ACS-75-2	MER 75E TOWER TWO	E. PERIPHERAL 59-91st FLOOR	55,000	10.5	2,684	1,125	TOP HORIZ	III	3	44.5	DWDI	119	150	1,750	460	3	60	.30	1.5	85	500	RIGA FLOW 100

SYSTEM NO.	HEATING COILS: ENTERING AIR TEMP. °F D.B.	LEAVING AIR TEMP. °F	MAXIMUM AIR PRESSURE DROP INCHES OF WATER	TOTAL STEAM LBS./HR.	INLET PRESSURE PSIG	NUMBER OF SECTIONS	CASING HEIGHT IN INCHES	NOMINAL TUBE LENGTH FEET	TOTAL FACE AREA SQ. FEET	FACE VELOCITY F.P.M.	MBH	NUMBER OF ROWS DEEP	FINS PER FOOT	COOLING COILS: AIR SIDE ENTERING TEMP. °F D.B.	W.B.	LEAVING TEMP. °F D.B.	W.B.	MAX. PRESSURE DROP INCHES OF WATER	WATER SIDE MINIMUM G.P.M.	ENTERING TEMP. °F	LEAVING TEMP. °F	MAX. PRESSURE DROP FEET OF WATER	NUMBER OF SECTIONS	SECTION CASING HEIGHT IN INCHES	NOMINAL TUBE LENGTH FEET	TOTAL FACE AREA SQ. FEET	FACE VELOCITY F.P.M.	NUMBER OF ROWS DEEP	FINS PER FOOT	CIRCUITING	SEN. HEAT – MBH	TOTAL HEAT – MBH	REMARKS
ACS-41-1	10	75	0.25	3,470	5	4	37	8'-6"	70	678	3,335	2	110	90.5	71.1	48.0	47.0	1.19	377	38	57	14.7	4	44.5 44.5 44.5 44.5	6'-6"	89	530	8	138	FULL	2,180	3,590	
ACS-41N	–	–	–	–	–	–	–	–	–	–	–	–	–	79	66	60	58	1.02	67	38	49	7.6	2	23 27	6'-0"	22.6	530	6	120		246	308	
ACS-41-9	25	50	0.1	2,300	15	–	–	–	–	–	2,211	1	136	80.2	68.0	51.0	50.7	0.99	434	38	57.0	5.9	4 4	41.5 37.5	7'-0"	163.3	496	6	168		2,567	4,201	
ACS-41S	–	–	–	–	–	–	–	–	–	–	–	–	–	79	66	60	58	1.02	67	38	49	7.6	2	23 27	6'-0"	22.6	530	6	120		246	308	
ACS-41-3	10	75	0.28	4,130	5	4	37	7'-6"	80.7	700	3,964	2	136	89.0	70.6	48.4	47.9	1.14	419	38	57.0	21.2	4	44.5 48 44.5 48	7'-6"	108	522	8	135		2,521	3,858	
ACS-75N	–	–	–	–	–	–	–	–	–	–	–	–	–	79	66	60	58	1.02	67	38	49	7.6	2	23 27	6'-0"	22.6	530	6	120		246	308	
ACS-75-1	10	75	0.23	3,360	5	4	37	6'-6"	70.0	657	3,230	2	108	90.5	71.7	48.0	47.0	1.12	368	38	57.0	15.6	4	44.5 44.5 44.5 44.5	6'-6"	89	517	8	138		2,111	3,477	
ACS-75S	–	–	–	–	–	–	–	–	–	–	–	–	–	79	66	60	58	1.02	67	38	49	7.6	2	23 27	6'-0"	22.6	530	6	120		246	308	
ACS-75-3	10	75	0.27	4,020	5	4	37	7'-6"	80.7	682	3,859	2	135	89.0	70.6	48.4	47.9	1.08	408	38	56.4	20.1	4	44.5 48 44.5 48	7'-6"	108	509	8	135		2,454	3,756	
ACS-75W	–	–	–	–	–	–	–	–	–	–	–	–	–	79	66	60	58	1.02	67	38	49	7.6	2	23 27	6'-0"	22.6	530	6	120		246	308	
ACS-75-4	10	75	0.235	3,400	5	4	37	6'-6"	70.0	664	3,265	2	108	90.5	71.7	48.0	47.0	1.15	370	38	57.0	15.2	4	44.5 44.5 44.5 44.5	6'-6"	89	522	8	138		2,134	3,515	
ACS-75E	–	–	–	–	–	–	–	–	–	–	–	–	–	79	66	60	58	1.02	67	38	49	7.6	2	23 27	6'-0"	22.6	530	6	120		246	308	
ACS-75-2	10	75	0.27	4,020	5	4	37	7'-6"	80.7	682	3,859	2	135	89.0	70.6	48.4	47.9	1.08	408	38	56.4	20.1	4	44.5 48 44.5 48	7'-6"	108	509	8	135		2,454	3,756	

NOTES:
1. ALL SUB-STATION UNITS SHALL HAVE THE SUPPLY FAN SUPPORTED FROM THE UNITS STRUCTURE WITH VIBRATION ISOLATORS.
2. PROVIDE 60" X 48" SAFETY BAR GRATING IN THE FLOOR OPENING OF EACH SUB-STATION UNIT.

RETURN AND EXHAUST FAN SYSTEMS

SYSTEM NO	LOCATION	SERVICE	FAN: C.F.M. AT 70°F	STATIC PRESSURE INCHES OF WATER	MAXIMUM OUTLET VELOCITY F.P.M.	R.P.M.	DIRECTION OF DISCHARGE	ARRANGEMENT	CLASS	WHEEL DIAMETER INCHES	B.H.P.	MOTOR: MINIMUM H.P.	R.P.M.	VOLTS	PHASE	HZ	REMARKS
E-41-20	MER 41N TOWER ONE	ELECTRICAL SUBSTATION NORTH – EXHAUST	12,000	1	–	600	PLENUM	PLUG	1	36.5	3.3	5	1,750	460	3	60	
E-41-21	MER 41S TOWER ONE	ELECTRICAL SUBSTATION SOUTH – EXHAUST	12,000	1	–	600			1	36.5	3.3	5	1,750	460	3	60	
E-75-21	MER 75N TOWER ONE	ELECTRICAL SUBSTATION NORTH – EXHAUST	12,000	1	–	600			1	36.5	3.3	5	1,750	460	3	60	
E-75-22	MER 75S TOWER ONE	ELECTRICAL SUBSTATION SOUTH – EXHAUST	12,000	1	–	600			1	36.5	3.3	5	1,750	460	3	60	
E-75-22	MER 75W TOWER TWO	ELECTRICAL SUBSTATION WEST – EXHAUST	12,000	1	–	600			1	36.5	3.3	5	1,750	460	3	60	
E-75-21	MER 75E TOWER TWO	ELECTRICAL SUBSTATION EAST – EXHAUST	12,000	1	–	600			1	36.5	3.3	5	1,750	460	3	60	

SILENCERS

SYSTEM NO.	LOCATION	FACE DIMENSIONS: WIDTH	HEIGHT	LENGTH	FLOW CFM	SILENCER P.D.	DYNAMIC INSERTION LOSS: 63	125	250	500	1000	2000	4000	8000	REMARKS
ACS-41-1	MER 41N TOWER ONE	44"	86"	ELBOW	47,500	0.21	7	11	17	25	35	34	31	24	1. PROVIDE FIBERGLASS CLOTH LINING.
ACS-41-3	MER 41S TOWER ONE	48"	90"		56,500	0.25	8				31	31	28		
ACS-75-1	MER 75N TOWER ONE	44"	78"		48,000	0.24	7				35	34	31		
ACS-75-3	MER 75S TOWER ONE	48"	90"		55,000	0.24	8				32	31	28		
ACS-75-4	MER 75W TOWER TWO	44"	86"		48,500	0.2	7				35	34	31		
ACS-75-2	MER 75E TOWER TWO	48"	90"		55,000	0.24	8				32	31	28		

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE CONTRACT DRAWINGS CONSTITUTING A PART OF CONTRACT NO. WTC-802.071 IN THE FORM IN WHICH SAID DRAWINGS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.

DATE 6/21/95 Southern A. Aslam
SPEC. WRITER

DATE 9/5/95 Peter K. Sweeney
ENGINEER OF DESIGN

FILE NAME SS.M3 SCALE FACTOR 1=8'

Sheet 56 of 224

THE PORT AUTHORITY OF NY & NJ

Peter K. Sweeney
ENGINEERING PROGRAM MANAGER - WORLD TRADE

Alfred Brown
CHIEF MECHANICAL ENGINEER

No.	Date	Revision	Approved

Engineering Department
Design Division

The World Trade Center

Electrical/HVAC Upgrade Program

Title
TOWER ONE AND TWO LOW VOLTAGE SUBSTATIONS CONSTRUCTION AND INSTALLATION

MECHANICAL

SCHEDULES

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

A.B. Designed by | E.E. Drawn by | S.W. Checked by

Date 5/1/95 Scale NONE

Contract Number WTC-802.071 Drawing Number M-3